

Treasury bills plus 3.25 percentage points (or 3.50 percentage points if tax-exempt funds are used). The rate paid to lenders, which changes every three months, varied between 8.76 percent and 12.12 percent over the last five years and was 8.78 percent between July and September 1991.

The lenders disburse and administer the loans (or they commonly pay servicing companies to administer the loans). While borrowers attend school, the banks receive interest payments from the government and have few administrative responsibilities. After students graduate, the lenders or their servicing agents are responsible for being diligent in collecting the payments on the loans.

Servicing costs for lenders are about 0.5 percentage points on the average value of loans while borrowers are in school.¹ Servicing costs rise to about 1.25 percentage points after borrowers leave school because of the costs of collecting payments from a highly mobile group of borrowers. The lenders receive interest payments of 3.25 percentage points over the bond equivalent of the 91-day Treasury bill rate, providing the typical lender with at least a 1 percentage point premium on the average value of loans after accounting for their costs of funds.²

Lenders often sell the loans in the secondary market, which provides them with liquidity by exchanging the assets for cash, thereby allowing them to make additional loans. Loans are most profitable to the holders during the period that borrowers are in school since the costs of administering the loans are lowest then. This fact and the desire to develop relationships with the borrowers while they are in school, together with the difficulty of servicing the loans if the borrowers move out of the area, often lead banks to sell the loans just before the borrowers graduate.

Purchasers of student loans include Sallie Mae (the Student Loan Marketing Association), several large banks, and state-level agencies that have been established for this purpose. Sallie Mae is a federally chartered stockholder-owned corporation that owns about one-third of all student loans.³

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1. Many loans are serviced by servicing agencies whose fees are paid by the lenders. The servicing business is highly competitive.
 2. See U.S. Department of Education, "Lender Profitability in the Student Loan Program" (April 1991).
 3. The recent Congressional Budget Office study, *Controlling the Risks of Government-Sponsored Enterprises* (April 1991), contains a chapter discussing the role of Sallie Mae and considering the financial risks it poses to the federal government.

The price paid in the secondary market for student loans depends on when the loans are sold and on the source of funds used in their purchase. Because of the increased costs of servicing the loans after borrowers leave school, Sallie Mae and banks often pay less for loans when borrowers leave school than they would have when the loan was first made. State-level agencies purchase loans to ensure that the banks in their areas have sufficient funds to continue to lend to students and are generally not allowed to compete much on the price that they pay. If they use tax-exempt financing, they may only pay between 99 percent and 101 percent of the face value when they purchase the loans, with the result that they are unable to pay less for loans that they believe have a higher likelihood of default.

Net rates of return on the loans are determined by the rate of interest, the likelihood of default (which affects the administrative costs that the lenders expect to incur), and the price paid for the loans. Reflecting differences in their goals, their restrictions, and their costs of capital, Sallie Mae earns about a 1 percent return on its loan volume, large banks have slightly lower returns, and state-level agencies have both positive and negative returns over time.

The Guaranty Agency's Role

Guaranty agencies are state or private nonprofit organizations that insure lenders against losses that arise if students default on their loans.⁴ Defaults are defined to occur when borrowers become 180 days late in repaying their loans. When borrowers default, the lenders collect the face value of the loans from the guaranty agencies plus any accrued interest (if they have been diligent in attempting to collect loan payments). The responsibility for collecting on the defaulted loans then shifts to the guaranty agencies. The guaranty agencies collect most of their default payments from the federal government.

The guaranty agencies repay the federal government 70 percent of any collections of previously defaulted loans for which they were previously reimbursed and keep the remaining 30 percent (or 65 percent if the state has a wage garnishment law) to help pay for the costs of collection. Defaulters who ultimately repay are charged for the agency's collection costs, an additional way of recouping these costs. Approximately 35 percent of defaults are eventually repaid by borrowers.

4. Guaranty agencies also insure the loans against the death, disability, or bankruptcy of the borrower, although these types of claims are relatively small. Moreover, it has become increasingly difficult to discharge a student loan in bankruptcy court.

Guaranty agencies are required to pay the federal government an annual reinsurance fee equal to 0.25 percent of the value of loans newly guaranteed during that fiscal year. Agencies whose default rate rises above 5 percent pay a fee of 0.50 percent. In 1990, the federal government received \$42 million in reinsurance fees.

Although more than one guaranty agency can operate in a state, each state has one guarantor designated by the Department of Education and required by federal law to guarantee student loans made by banks in that state and to act as the "lender of last resort" if students cannot find banks to make the loans. Guaranty agencies may guarantee loans in any state, and if they are not the "designated guarantor" in a state, they may choose which loans to guarantee.

The guaranty agencies have four main sources of revenue. First, the federal government provides repayable advances in the form of interest-free loans when the agencies are created. The federal government also advances funds to agencies to maintain adequate reserves. These funds can be used only to pay claims by lenders, and can be recalled by the Department of Education whenever it deems that the agencies have adequate reserves. Most older agencies have repaid the advances, while several new agencies have outstanding advances that total about \$50 million.

Second, as stated above, the federal government reinsures the guaranty agencies, generally reimbursing them for 100 percent of the amounts of defaulted loans. In any fiscal year, however, if the default claims on loans guaranteed by an agency climb above 5 percent of the amount of loans in repayment at the end of the preceding fiscal year, the federal reimbursement rate falls to 90 percent on all of their default claims for the remainder of that year. Furthermore, if the agency's default rate rises above 9 percent, the federal reinsurance rate falls to 80 percent on all subsequent claims in that year. In 1990, seven guaranty agencies ended the year with a 90 percent reimbursement rate and three agencies ended the year with an 80 percent reimbursement rate.

Third, the federal government pays guaranty agencies an allowance for administrative costs equal to 1 percent of the value of new loans in each year. These payments totaled about \$135 million in 1990.

Finally, guaranty agencies can charge an insurance fee of up to 3 percent of the loan when the loans are made, leading to a total charge of up to 8 percent--the insurance fee plus the 5 percent loan origination fee mentioned earlier. Guaranty agencies may charge different students different insurance fees. In practice, guarantors that choose to differentiate generally

charge different fees to students at public, private, and proprietary schools, as well as to undergraduate and graduate borrowers.

Some guaranty agencies also run auxiliary enterprises that are tied to the student aid programs in their states, such as tuition prepayment plans and loans to parents. These programs are generally designed to broaden the options for families living in their states and for students attending schools there. As such, they do not always have a positive rate of return.

One multistate guaranty agency, the Higher Education Assistance Foundation (HEAF), recently collapsed. To save the system, an agreement was reached whereby the guarantee on the loans made by HEAF will be transferred to other agencies by December 1993. In the meantime, Sallie Mae is managing the HEAF portfolio. New arrangements would need to be negotiated if another agency were to face financial ruin, however, because there are no established procedures in this event.

The Federal Government's Role

The federal government pays lenders the interest due on Stafford Loans while the students attend school, during the six-month grace period immediately following postsecondary schooling, and during the period, if any, when the students defer repaying their loans. While the students are repaying the loans, the federal government pays the lenders a "special allowance"--the difference, if any, between the rate of interest guaranteed the lenders and the rate paid by the students. The federal government has made special allowance payments on Stafford Loans in every quarter since 1969. The bond equivalent of the Treasury bill rate would have to drop below 4.75 percent to have no special allowance payments on most Stafford Loans.

The federal government also oversees the operation of the program. The Department of Education is responsible for checking that schools are eligible to participate in the program and that the guaranty agencies administer the program correctly. The federal government also implicitly backs the integrity of the system.

THE GROWTH IN STAFFORD LOANS

The value of loans made through the Stafford Loan program has grown substantially since its inception.⁵ This growth has been driven by an increase in the number of borrowers--from an annual average of about 750,000 between 1966 and 1974 while the programs were becoming established to roughly 3.5 million annually since 1984 (see Figure 2). The average real loan changed little during this period, increasing slightly during the 1970s and falling back to just below its original level in 1990.

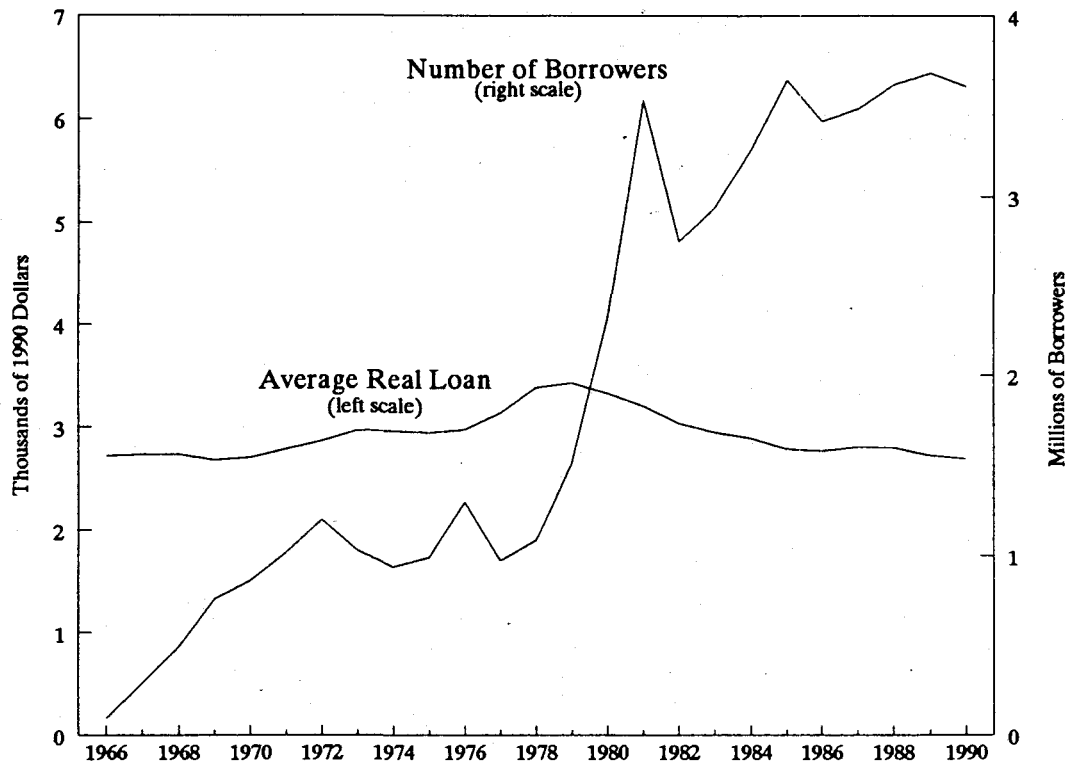
The patterns of change in the number of borrowers has been similar at public and private colleges (see Figure 3).⁶ The number of recipients grew dramatically between 1978 and 1981 as eligibility was extended to all students irrespective of their families' financial resources. In 1982, the number of borrowers at public and private colleges fell when applicants again had to demonstrate financial need. The number of borrowers at proprietary schools continued to increase dramatically.

The importance to students of Stafford Loans has changed as the portion of the costs of the average college education paid for by the average loan first increased during the 1970s and then fell during the 1980s, reflecting changes in the maximum loan amount, eligibility requirements, and the costs of attending college (see Figure 4). (Information on the costs of proprietary schools over time is not available.) In 1968, the average loan borrowed by students at public colleges paid for just under 80 percent of their average costs, while the average loan for students at private colleges paid for slightly more than 40 percent of their costs. These fractions rose to a high of about 90 percent for students at public colleges and about 50 percent for students at private colleges by 1980 as the average real cost of a college education remained relatively constant. By 1989, the average loan had fallen to about 60 percent of the costs at public colleges and about 30 percent of the costs at private colleges because the average real cost of attending college increased substantially and the average real Stafford Loan remained fairly constant during this period.

5. This section includes data from both the Stafford Loan program and the Federally Insured Student Loan program. These programs have served the same purpose and have also been the same from the perspective of students.

6. The pattern of change in dollars borrowed by type of school is the same as the pattern of the number of borrowers.

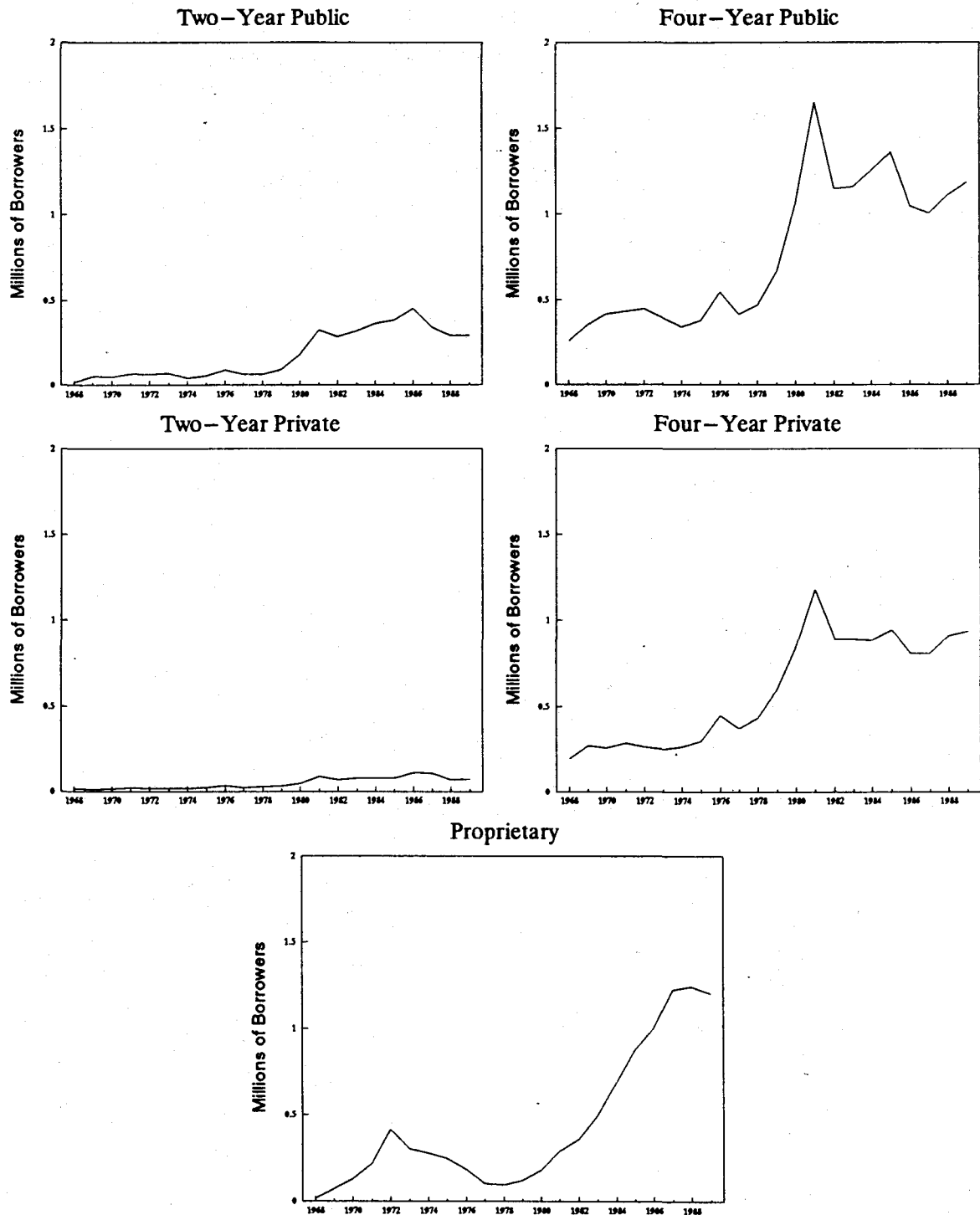
Figure 2.
Number of Stafford Loan Borrowers and Average Real Stafford Loan, 1966–1990



SOURCE: Congressional Budget Office calculations based on data from Department of Education, "FY 1990 Guaranteed Student Loan Programs Data Book."

NOTE: Data refer to loans made in both the Stafford and the Federally Insured Student Loan (FISL) programs, although no new FISL loans have been made since 1984.

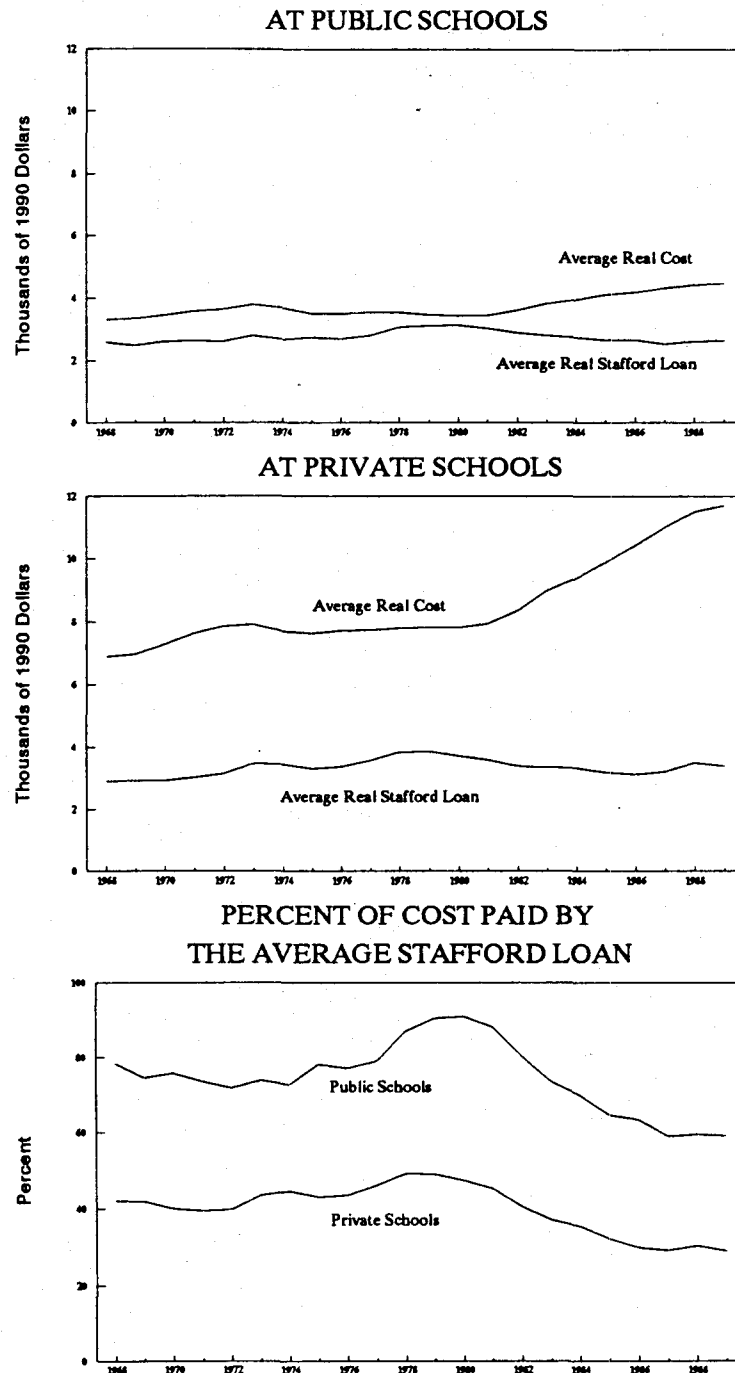
Figure 3.
Number of Stafford Loan Borrowers, by Type of School, 1968–1989



SOURCE: Congressional Budget Office calculations based on data from Department of Education, "FY 1990 Guaranteed Student Loan Programs Data Book."

NOTE: Data refer to loans made in both the Stafford and the Federally Insured Student Loan (FISL) programs, although no new FISL loans have been made since 1984.

Figure 4.
Average Real Cost of Postsecondary Education and Real Stafford
Loan, by Type of School, 1966–1989



SOURCE: Congressional Budget Office calculations based on data from Department of Education, "FY 1990 Guaranteed Student Loan Programs Data Book" and "Digest of Education Statistics," 1990.

NOTE: Data refer to loans made in both the Stafford and the Federally Insured Student Loan (FISL) programs, although no new FISL loans have been made since 1984. No information is available on the cost of proprietary schools over time.

CHARACTERISTICS OF STAFFORD LOAN BORROWERS

In the 1989-1990 school year, 16 percent of all students attending postsecondary schools received Stafford Loans (see Table 1). Some students are much more likely to borrow than others, however, depending on the type of school they attend, whether they attend full time, their employment status while attending school, and their personal characteristics.

Students attending proprietary schools and private four-year colleges are the most likely to borrow. About 55 percent of all students at proprietary schools and 26 percent of all students at private four-year colleges received Stafford Loans during the 1989-1990 school year. Students attending public two-year colleges are the least likely to borrow--only 4 percent of them took out Stafford Loans that year.

The likelihood that undergraduates borrow does not vary dramatically with their year in school. Most borrowers, like most students, are in their first year. Students who attend school part time are unlikely to borrow, in large part because of a requirement in the Stafford Loan program that borrowers must attend school at least half time. In addition, students who are not employed during the school year are more likely to borrow than those who are employed, perhaps indicating that some students choose to borrow instead of work.

Students' personal characteristics are also correlated with whether or not they borrow. Students from low-income families are considerably more likely to receive a Stafford Loan than are those from higher-income families, reflecting both their greater financial need and the income restrictions of the program. Black students are more likely and Asian students less likely to borrow than are other students. Finally, students who had not completed high school or received General Education Development (GED) diplomas were more likely to borrow in the 1989-1990 school year, although they are generally not eligible to receive federal student aid now without taking an independently administered test.

**TABLE 1. ATTRIBUTES OF STUDENTS AND BORROWERS
ATTENDING POSTSECONDARY SCHOOLS, AND
SHARES OF STUDENTS WITH GIVEN ATTRIBUTES
WHO BORROW, 1989-1990 (In percent)**

Attribute	All Students ^a	Borrowers ^b	Share of Students With Attribute Who Borrow ^c
All Students	100	100	16
Type of School			
Public			
Four-year	36	35	15
Two-year	38	10	4
Private			
Four-year	17	28	26
Two-year	1	2	19
Proprietary	8	26	55
Year in School			
First Year	44	42	15
Second Year	21	18	14
Third Year	10	12	19
Other Undergraduates	12	15	19
Graduate School	9	6	11
Professional School ^d	4	7	28
Attendance Status			
Full-time	54	86	26
Part-time	46	14	5
Independent	57	57	16
Dependent	42	42	16

(Continued)

TABLE 1. (Continued)

Attribute	All Students ^a	Borrowers ^b	Share of Students With Attribute Who Borrow ^c
Employment During School			
Employed	72	63	14
Not Employed	28	37	21
Personal Characteristics			
Female	56	56	16
Male	44	44	16
Unmarried	67	78	18
Married	27	19	11
Separated	2	2	22
Other	3	1	3
White	77	73	15
Black	10	15	25
Hispanic	8	8	16
Asian	5	3	11
Other	1	1	13
High School Diploma	98	96	15
No High School Diploma or GED ^c	2	4	31
Family Income, Dependents			
\$0 - \$10,999	13	21	26
\$11,000 - \$16,999	6	10	25
\$17,000 - \$22,999	8	11	22
\$23,000 - \$29,999	10	14	22
\$30,000 - \$49,999	29	30	16
\$50,000 or more	34	14	7

(Continued)

TABLE 1. (Continued)

Attribute	All Students ^a	Borrowers ^b	Share of Students With Attribute Who Borrow ^c
Personal Characteristics (cont'd.)			
Family Income, Independents			
\$0 - \$10,999	35	60	27
\$11,000 - \$16,999	15	15	16
\$17,000 - \$22,999	12	9	11
\$23,000 - \$29,999	11	7	10
\$30,000 - \$49,999	19	7	6
\$50,000 or more	8	2	3

SOURCE: Congressional Budget Office estimates based on data from the Department of Education's National Postsecondary Student Aid Study.

NOTE: 18.6 million students were enrolled in postsecondary schools at some time during 1989-1990, 16 percent of whom received a Stafford Loan.

- a. The percentage of all students with the indicated attribute.
- b. The percentage of all Stafford Loan borrowers with the indicated attribute.
- c. The percentage of all students with the indicated attribute who have at least one Stafford Loan taken out in this year of school.
- d. Professional schools are medical, law, and business schools.
- e. Students without high school or General Education Development (GED) diplomas can no longer borrow under the GSL programs without passing a test designed to indicate whether they could benefit from further education.

CHAPTER III

FACTORS DETERMINING THE FEDERAL COST

Federal costs for the guaranteed student loan programs are mostly attributable to interest and default payments. This chapter discusses these components and analyzes how costs vary among different types of borrowers.

COMPONENTS OF FEDERAL COST

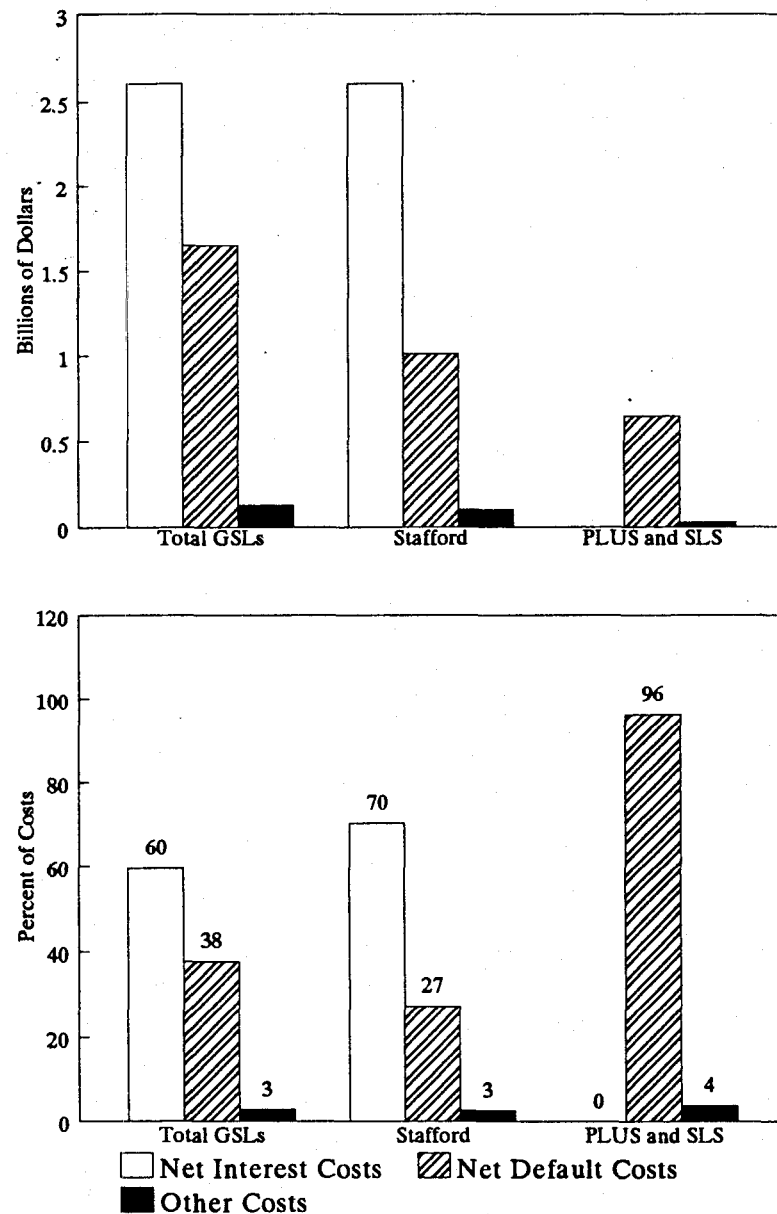
The cost of the GSL programs to the federal government includes both interest payments net of the origination fee and default payments net of repayments. Separate records for the different GSL programs are unavailable for all the years since the programs started, so the data presented here are for the programs combined. Stafford Loans are the only GSLs that provide substantial interest subsidies, however, so the interest payments can be attributed mostly to the Stafford Loan program. The costs for defaults reflect the experience of the GSL programs combined. For example, in 1990, net interest payments in the Stafford Loan program totaled \$2.6 billion, or 70 percent of its costs (see Figure 5). Because the PLUS (Parent Loans to Undergraduate Students) and Supplemental Loans for Students programs incurred no interest costs, but did incur substantial default costs, interest payments were only 60 percent of the total GSL costs. Similarly, net default payments were 27 percent of the cost of the Stafford Loan program but 38 percent of total GSL costs.

Factors Determining Interest Costs

Breaking the cost of interest payments into its components helps to clarify its fluctuations. The annual federal expenditure on interest in the Stafford Loan program may be approximately expressed in the following formula:

$$\begin{array}{rclcl} \text{interest} & & \text{the value of} & & \text{the bond equivalent of the} \\ \text{cost} & = & \text{loans for} & \times & \text{91-day Treasury bill rate} \\ & & \text{borrowers in} & & \text{plus 3.25 percentage points} \\ & & \text{school} & & \\ & + & \text{the value} & \times & \text{the average} \\ & & \text{of loans in} & & \text{special} \\ & & \text{repayment} & & \text{allowance rate} \end{array}$$

Figure 5.
Net Interest Costs, Net Default Costs, and Other Costs in the Guaranteed Student Loan Programs in 1990



SOURCE: Congressional Budget Office calculations based on data from Department of Education, "FY 1990 Guaranteed Student Loan Programs Data Book" and "Digest of Education Statistics," 1990.

NOTE: Federally Insured Student Loans and Stafford Loans were known as "regular" guaranteed student loans (GSLs) until recently. Currently, the term GSL refers to those loans as well as PLUS loans (Parent Loans to Undergraduate Students) and Supplemental Loans for Students (SLS).

Other things being constant, the interest cost falls as the value of loans outstanding--that is, loans to borrowers in school and loans in repayment--decreases, the 91-day Treasury bill rate declines (affecting interest payments both while borrowers are in school and, through the special allowance, while they are repaying loans), or if the 3.25 percentage point premium is lowered in the law. The federal government also collects 5 percent of the value of all new loans as an origination fee. This amount is intended partially to offset federal interest payments.

As the 91-day Treasury rate rose from 10 percent in 1979 to 14 percent in 1981 and the real value of outstanding loans rose from \$15.7 billion to \$26.9 billion, the real net interest costs increased from \$1.1 billion to \$2.9 billion (see Figure 6). Although the real value of outstanding loans doubled to \$52.7 billion by 1990, real net interest costs actually fell slightly to \$2.6 billion, because the origination fee began in 1981 and because the interest rate declined to 7.5 percent.

With the current value of outstanding loans, a permanent one-percentage-point increase in the Treasury bill rate (or in the 3.25 percentage point premium that lenders receive) increases federal spending by about \$350 million in the Stafford Loan program. Likewise, for a 100,000 increase in the number of borrowers, interest costs rise by about \$80 million.

Determinants of Default Costs

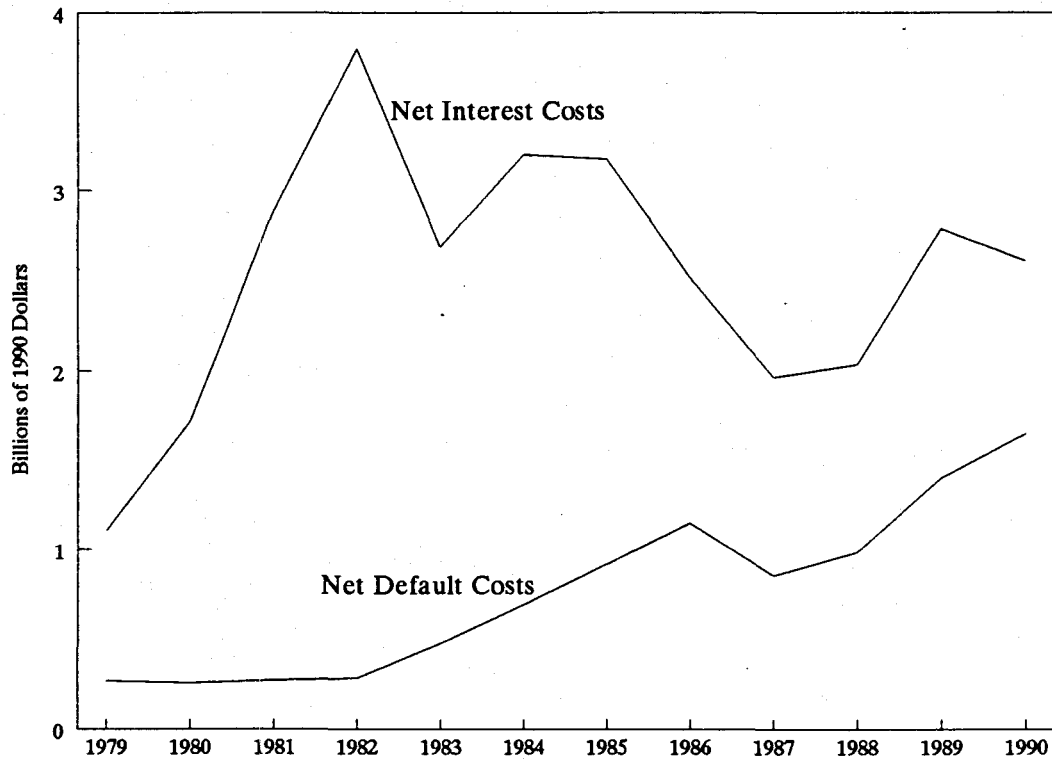
Similarly, breaking the cost of defaults into its components, the net default cost to the federal government in a particular year is:

$$\begin{array}{ccccccc} \text{net} & & \text{the value} & & \text{the annual} & & \text{collected funds} \\ \text{default} & = & \text{of loans in} & \times & \text{default} & - & \text{that were previously} \\ \text{cost} & & \text{repayment} & & \text{rate} & & \text{counted as defaults} \end{array}$$

Other things being equal, the net default cost rises if the value of loans in repayment increases, the annual default rate rises, or collections on previously defaulted loans fall.

Between 1979 and 1982, the real value of loans in repayment grew roughly 70 percent, but federal spending on defaults grew only slightly because the annual default rate fell by almost one-third (see Figure 7). Federal expenditures on defaults then climbed as the real value of loans in repayment soared from \$9.3 billion to \$24.1 billion in 1986 and the annual default rate

Figure 6.
Net Interest Costs and Net Default Costs in the Guaranteed Student Loan Programs, 1979–1990 a/



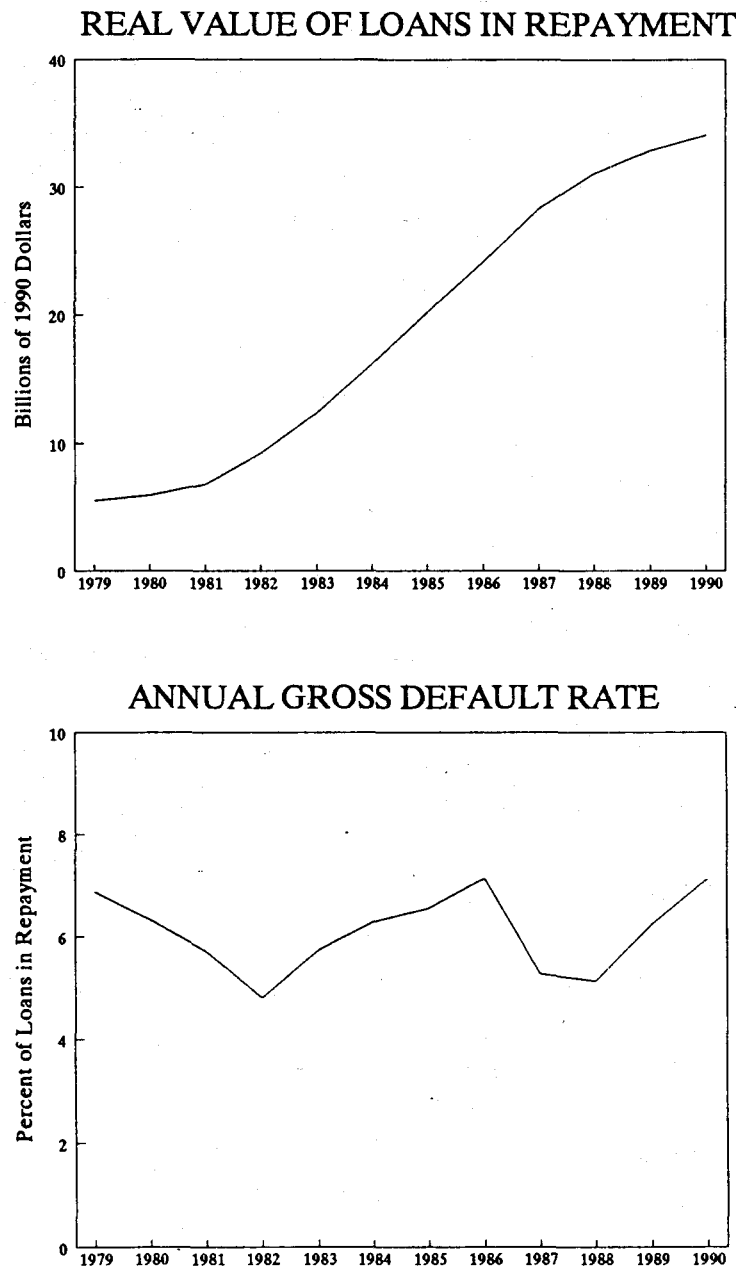
SOURCE: Congressional Budget Office calculations based on data from Department of Education, "FY 1990 Guaranteed Student Loan Programs Data Book" and "Budget of the U.S. Government," fiscal years 1991 and 1992.

NOTE: Federally Insured Student Loans and Stafford Loans were known as "regular" guaranteed student loans (GSLs) until recently. Currently, the term GSL refers to those loans as well as PLUS loans (Parent Loans to Undergraduate Students) and Supplemental Loans for Students.

a/ See the text of the paper for a complete definition of these costs.

Figure 7.

The Real Value of Loans in Repayment and the Annual Gross Default Rate in the Guaranteed Student Loan Programs, 1979–1990



SOURCE: Congressional Budget Office calculations based on data from Department of Education, "FY 1990 Guaranteed Student Loan Programs Data Book" and "Budget of the U.S. Government," fiscal years 1991 and 1992.

NOTE: The annual gross default rate is defined as the value of new defaults in a given year expressed as a percentage of the value of loans then in repayment.

rose from 4.8 percent to 7.1 percent. In 1987, costs fell temporarily as the annual default rate decreased. Since then, federal expenditures have grown considerably as the real value of loans in repayment has continued to grow and as the annual default rate has increased. This default rate is expected to climb further in 1991, leading to even larger expected default costs.

The growth in collections on previously defaulted loans has helped temper the increase in the cost of the program. The 1990 expenditure on defaults of \$1.6 billion was the net result of \$2.4 billion in new default costs less \$740 million in collections from previously defaulted loans (see Figure 8). This trend toward collecting an increasing percentage of previously defaulted loans may abate, however, if the collections to date have been for those defaulters with the ability to repay, while the debts that remain uncollected are from defaulters with relatively few financial resources.

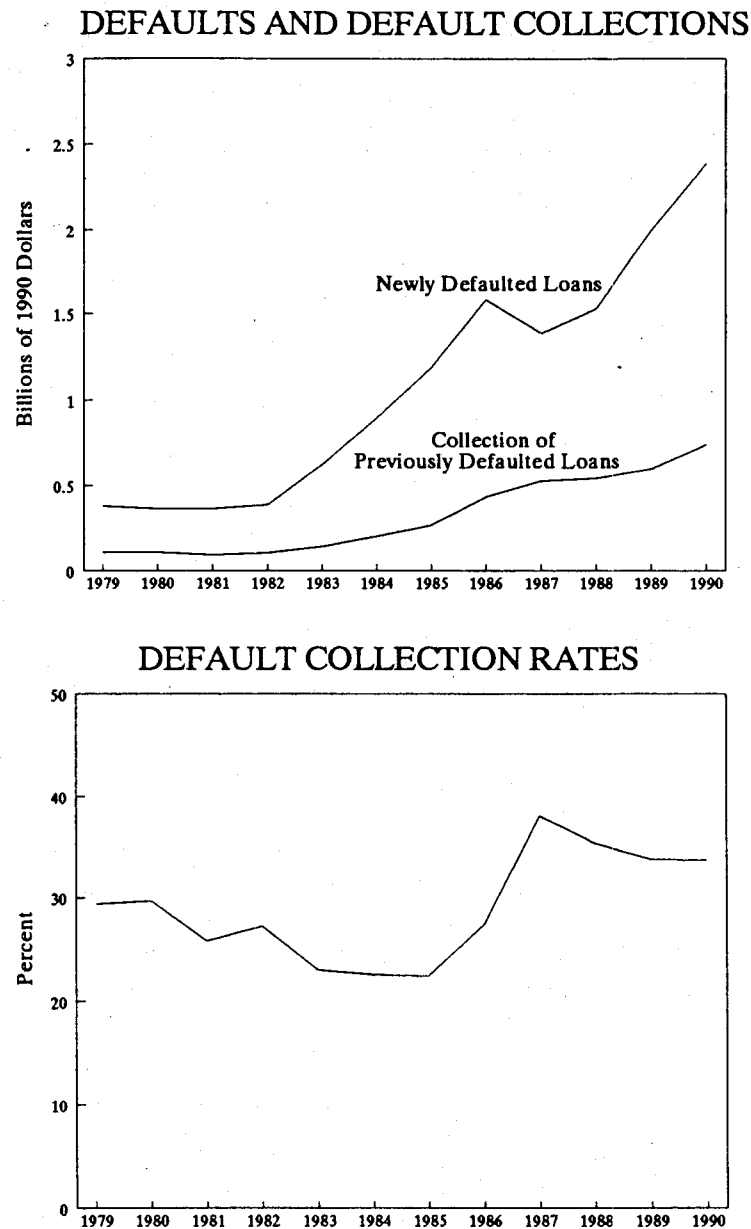
Default costs also depend on the likelihood that borrowers default.¹ On an individual basis, the likelihood that particular borrowers default depends on their ability to repay and their willingness to do so. Their ability to repay in turn depends on factors such as their current and future income and assets, the variability of their income, their parents' financial resources and willingness to help repay the loans, their expenses (particularly unexpected expenses), and the amount they owe. Their willingness to repay depends on factors such as their knowledge that loans should be repaid, their satisfaction with the education they received, their personal integrity, their concern about the financial consequences of defaulting, and their attitudes about both the government and banks.

To investigate the impacts of these attributes, CBO analyzed data from a 1987 survey of individuals who borrowed through the Stafford or FISL programs and who left postsecondary school between 1976 and 1985.² The overall likelihood of default for this sample of borrowers is 13 percent. The results presented here are estimates of the importance of each attribute after taking into account the effects of the other attributes that can be measured. Most of the variables measure the borrowers' abilities to repay. Whether they received loan information may change their willingness to repay. A few other variables may be related to both ability and willingness to repay.

1. For a summary of previous research, see General Accounting Office, "Student Loans: Characteristics of Defaulted Borrowers in the Stafford Student Loan Program" (April 1991).

2. The data are from the 1987 Student Loan Recipient Survey of the National Postsecondary Student Aid Study (NPSAS). Appendix B includes a more thorough discussion of the findings of this analysis and of the statistical techniques used.

Figure 8.
Defaults, Collections, and Collection Rates in the Guaranteed
Student Loan Programs, 1979–1990



SOURCE: Congressional Budget Office calculations based on data from Department of Education, "FY 1990 Guaranteed Student Loan Programs Data Book" and "Budget of the U.S. Government," fiscal years 1991 and 1992.

NOTE: The annual collection rate is defined as the value of new collections in the current year expressed as a percentage of the value of new defaults in the current year.

As expected, those with higher incomes are less likely to default than are those with lower incomes (see Table 2 on page 32).³ For example, individuals with incomes of \$10,000 are 5 percentage points more likely to default than the average borrower, while those with incomes of \$50,000 are 4 percentage points less likely to default than the average borrower.

Perhaps also indicating a greater ability to repay their loans, borrowers whose parents had higher incomes at the times they began their postsecondary educations are generally less likely to default than are those whose parents had lower incomes.⁴ Borrowers who anticipated receiving or had received financial help from their parents in repaying their loans are likewise an estimated 5 percentage points less likely to default. These characteristics indicate a greater access to financial resources, and may be particularly important when unexpected financial difficulties arise.

The total amount of borrowing did not affect the likelihood of default in this model. This result may occur because the amount of borrowing was related to other traits, such as the highest degree obtained, that capture the relationship. The result was somewhat sensitive to the exact specifications of the model used in this analysis, however.

Recipients who received deferments on their loan repayments were slightly more likely to default than were those who did not receive them. This result could indicate that some deferment periods are too short or do not cover all periods of financial hardship for borrowers, such as the unemployment of a spouse. Alternatively, perhaps the greater passage of time for borrowers receiving deferments reduces their commitment to repay their loans.

The chance that borrowers default is an estimated 13 percentage points higher for those without either a high school or a General Education Development diploma than for those with one of these, after taking into account the effects of further educational attainment and other factors.⁵ This result may indicate that students with little academic success in high school

3. The incomes reported are those in the year before the survey. Some borrowers in the sample had repaid their loans by then. The results do not change greatly, however, if individuals who had repaid their loans are excluded from the sample used for the analysis.

4. It may also be that borrowers from higher-income families have a greater knowledge about and experience with credit, leading them to have a greater willingness to repay their loans.

5. Students without high school or GED diplomas are no longer allowed to borrow in the GSL programs without passing a test designed to measure their ability to benefit from postsecondary education.

benefit less from any future education than do those who successfully complete high school, or that they have more erratic earnings and are thus more prone to default.

The types of schools that borrowers attended and the degrees that they received also affect whether or not they default, again after accounting for the effects of other traits. Recipients who attended proprietary schools are more likely to default than those who did not, while the chance of default is unaffected by whether or not borrowers attended public or private colleges.⁶ The types of schools attended by borrowers may also affect their willingness to repay student loans if borrowers attending proprietary schools are systematically less satisfied with their educations.

Borrowers who completed more postsecondary education are less likely to default than are those who completed less education, presumably at least partly because of increased earnings many years into the future (see Table 3 on page 34). In addition, those who were younger when they left school, given their educational attainment, are less likely to default, perhaps indicating that these individuals have greater abilities or motivation that will translate into higher future earnings. For example, the probability that borrowers who were 24 to 27 years old when they left school will default is 18 percentage points higher than the average borrower if they left postsecondary school with no degree, and it is 8 percentage points lower than the average if they received a graduate degree. Similarly, for borrowers whose highest degree is a college degree, the chance of defaulting is 6 percentage points lower than the average if they graduated before age 24, while it is 4 percentage points higher than the average if they were older than 27 when they graduated.

The likelihood of default is also affected by the willingness of borrowers to repay their loans, although little information about their willingness to repay is contained in the data. Notably, borrowers who have received information about repaying their loans from their postsecondary institutions or their banks are much less likely to default--9 percentage points less likely--than are those who have received no information.⁷ This result highlights the importance of borrowers understanding they are obliged to repay.

6. The data used here were collected before the explosion in the number of proprietary schools. If more current data were available, the effect of attending a proprietary school on the chance of default might be greater.

7. All borrowers now receive information from lenders when they receive their loans and again before their repayment period begins. This includes information on when the repayment is to begin, the length of time for repayment, and the consequences of default.

**TABLE 2. ESTIMATED EFFECTS OF SELECTED ATTRIBUTES
ON THE LIKELIHOOD OF DEFAULTING ON
STAFFORD LOANS (In percentage points) ***

Attribute	Change in Likelihood of Default
Income of Borrower (1990 dollars)	
\$10,000	5
\$20,000	2
\$30,000	0
\$40,000	-3
\$50,000	-4
Range of Parental Income When Borrower Started Postsecondary School (1990 dollars)	
\$0 - \$10,999	5
\$11,000 - \$16,999	7
\$17,000 - \$22,999	2
\$23,000 - \$29,999	-2
\$30,000 - \$49,999	1
\$50,000 or more	1
Income not reported	-6
Borrower's Parents Are Willing to Help Repay the Loan	-5
Loan Amount (1990 dollars)	b
Borrower Ever Received a Deferment	4
Borrower Has No High School or GED Diploma	13

(Continued)

TABLE 2. (Continued)

Attribute	Change in Likelihood of Default
Types of Schools Borrower Attended ^c	
Proprietary	3
Public	d
Private, nonprofit	d
Borrower Received Information About Loans	-9

SOURCE: Congressional Budget Office estimates based on data from the National Postsecondary Student Aid Study.

NOTES: Entries in this table indicate the change in the likelihood of default for specific attributes after removing the effects of many other factors. In addition to the factors listed above, other variables taken into account in calculating the impact of each attribute include marital status, children, sex, race, ethnicity, years out of school, level of parents' education, and amount borrowed by the spouse (if any).

The total effect of several attributes together may not equal the sum of the individual effects because of nonlinearities in the model used to estimate the effects.

See Appendix B for a more thorough discussion of the findings of this analysis and of the statistical techniques used.

- a. The overall likelihood of loan default is 13 percent.
- b. No significant change is associated with different loan amounts.
- c. Borrower may have attended more than one type of school.
- d. No significant change is associated with attending public or private schools.

TABLE 3. ESTIMATED CHANGES IN THE LIKELIHOOD OF DEFAULTING ON STAFFORD LOANS, BY THE HIGHEST LEVEL OF POSTSECONDARY SCHOOLING COMPLETED AND AGE WHEN THE BORROWER LEFT SCHOOL (In percentage points) ^a

Age Borrower Left School	Highest Level of Postsecondary Schooling Completed			
	None	Non-College Degree ^b	College Degree	Graduate Degree
Younger Than 22	7	-4	-6 ^c	-8 ^c
22 or 23 Years Old	8	1	-2	-2
24 to 27 Years Old	18	4	4	-2
28 Years Old or Older	23	13		

SOURCE: Congressional Budget Office estimates based on data from the National Postsecondary Student Aid Study.

NOTES: Entries in this table indicate the change in the likelihood of default, after taking many other factors into account. In addition to the factors in Table 2, other variables taken into account include marital status, children, sex, race, ethnicity, years out of school, level of parents' education, and amount borrowed by spouse (if any).

- a. The overall likelihood of loan default is 13 percent.
- b. Non-college degrees include two-year associate degrees and proprietary degrees.
- c. Because of small sample sizes, all borrowers age 23 or younger were grouped together in estimating the joint effect of age and obtaining a college degree. Similarly, all borrowers 27 or younger were grouped together in estimating the joint effect of age and obtaining a graduate degree.

VARIATION IN FEDERAL COSTS BY TYPE OF STUDENT

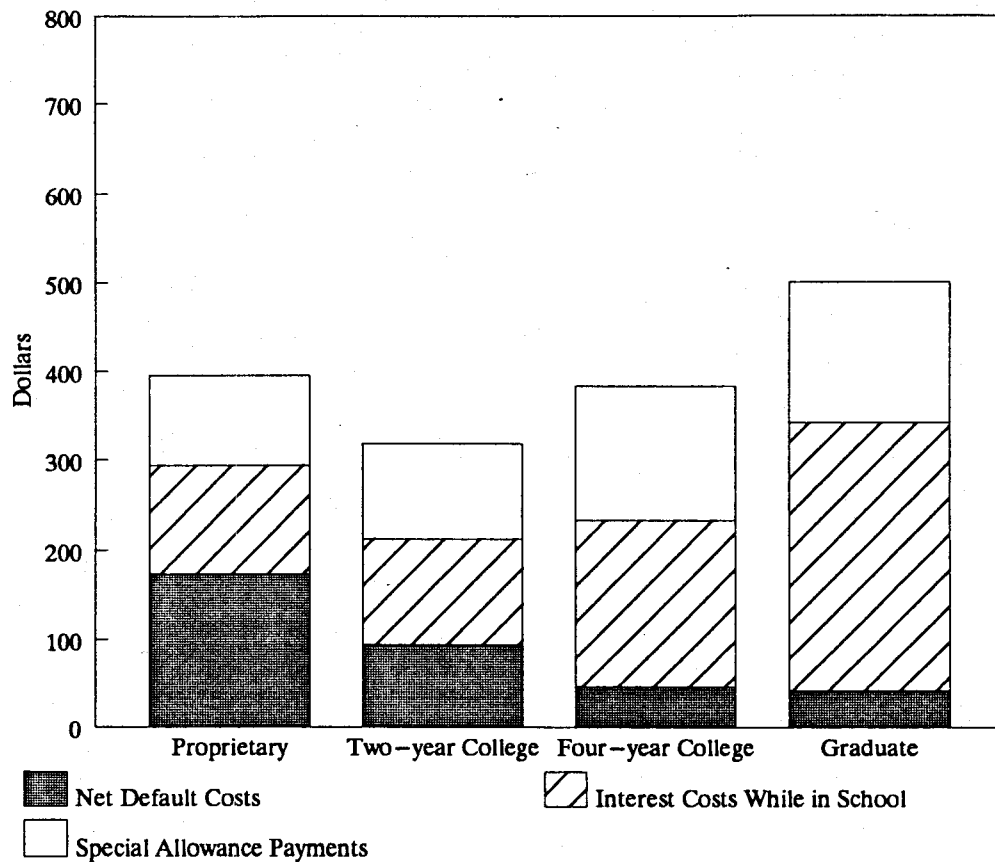
Students who borrow more, borrow for a longer period of time, default on their loans, or borrow when interest rates are higher cost the federal government more in loan subsidies than do other borrowers. For example, the average recipient who completes four years of college or who attends graduate school borrows more than other recipients. In contrast, the average borrower who attends a proprietary school or a two-year college is more likely to default. Other things being equal, students who had loans in the early 1980s cost the federal government more than did those who had loans at other times because interest rates were higher then.

Evidence from a study of borrowers in Pennsylvania whose loans became due for repayment in 1989 quantified these differences.⁸ This study considered both the federal cost per \$1,000 borrowed and the total federal cost of these Stafford Loans. (These loans could have originated in any previous year.)

When the federal costs of loan subsidies were calculated per \$1,000 borrowed, students who attended graduate school, on average, had the largest average costs at \$500 per student, or 50 percent of the amount borrowed by these students (see Figure 9). The larger part of this subsidy consisted of interest payments made while the students attended school. At an average subsidy of about \$400, students attending proprietary schools and four-year colleges received the next largest benefits per \$1,000 borrowed. Default payments were a large portion of the cost for students at proprietary schools, while interest payments were more important for students at four-year colleges. Students at two-year colleges received the lowest average overall federal payment per \$1,000 borrowed--about \$300. In all cases, the specific amounts of federal spending depended on the level of the interest rate when the students were in school. In a different year, the interest payments, and therefore the percentages of federal costs attributable to interest payments and defaults, could be quite different. For example, reflecting differences in the importance of interest payments for total costs, a one-percentage-point reduction in the interest rate would lower the total cost of these loans by about 20 percent for borrowers at graduate schools and four-year colleges, and by about 15 percent for borrowers at two-year colleges and proprietary schools.

8. Jerry S. Davis and Laura L. Greene, "How Federal Subsidies to the Stafford Loan Program are Distributed among Pennsylvania Borrowers," Pennsylvania Higher Education Assistance Agency (April 1990).

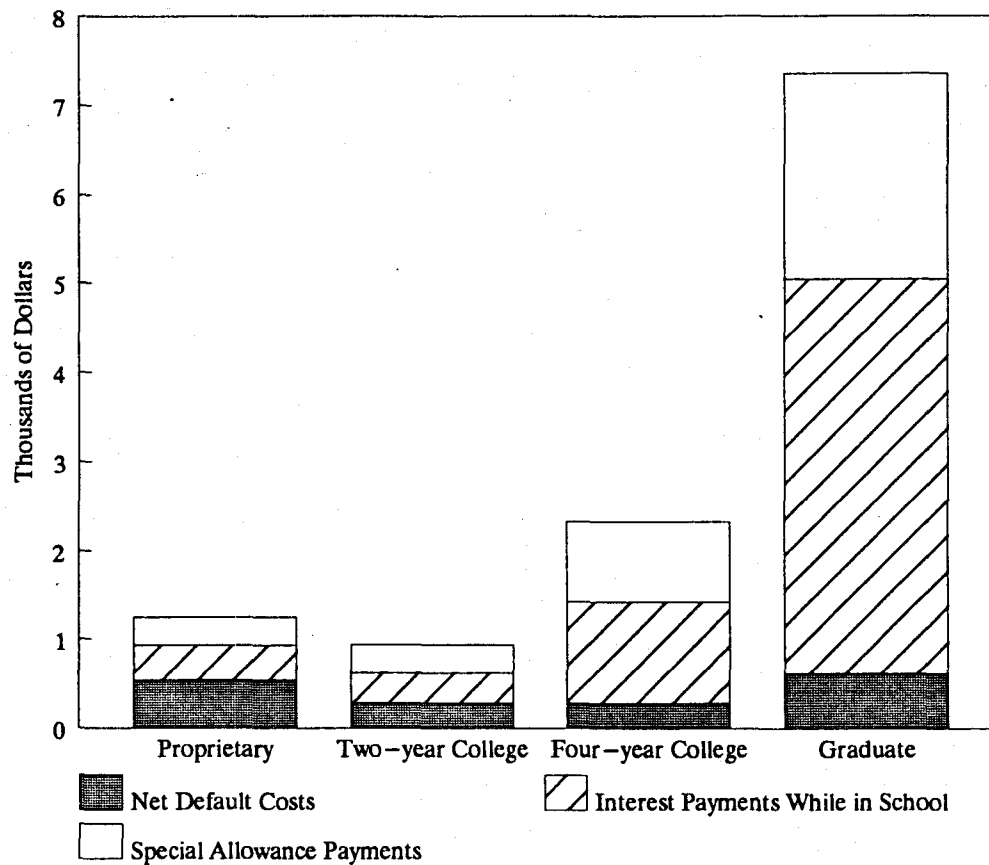
Figure 9.
Federal Costs per \$1,000 Borrowed in the Guaranteed Student Loan Programs,
by Costs and Type of School, 1989



SOURCE: Congressional Budget Office calculations based on data from Jerry S. Davis and Laura L. Greene, "How Federal Subsidies to the Stafford Loan Program are Distributed Among Pennsylvania Borrowers," Pennsylvania Higher Education Assistance Agency, April 1990.

When costs were calculated per borrower, differences in federal spending were much larger than per \$1,000 borrowed because they also reflected the different amounts borrowed by different types of borrowers. Again, the largest payments were on behalf of graduate students at about \$7,360 per borrower (see Figure 10). Borrowers at four-year colleges cost about twice as much as borrowers at proprietary schools--about \$2,330 compared with \$1,240--because the average borrower attending a four-year school had loans that totaled about twice those of the average borrower at a proprietary school. Loan recipients at two-year colleges had the lowest average federal cost, about \$930, because they borrowed the least.

Figure 10.
Total Federal Costs per Borrower in the Guaranteed Student Loan Programs,
by Costs and Type of School Attended, 1989



SOURCE: Congressional Budget Office calculations based on data from Jerry S. Davis and Laura L. Greene, "How Federal Subsidies to the Stafford Loan Program are Distributed Among Pennsylvania Borrowers," Pennsylvania Higher Education Assistance Agency, April 1990.